



## EVALUATING PESTICIDES, ASSESSING RISKS

**BY LAW, DPR MUST REGISTER PESTICIDES** before they can be sold in California. DPR thoroughly evaluates whether a product can be used safely and effectively. And we regularly reassess registered products to assure that their continued use poses no significant risks.

### Achieving data collection goals

After gathering and evaluating health-effects data on older pesticides for more than a decade under the Birth Defect Prevention Act, DPR has passed a major milestone by completing the data collection process for the 200 highest-priority chemicals. DPR scientists can more fully assess possible hazards with this data.

In 2000, DPR also finished collecting environmental fate data for agricultural pesticides used outdoors, as required under the Pesticide Contamination Prevention Act. These studies help DPR determine whether the use of a pesticide may pollute ground water.



**Reduced-risk pesticides registered**  
DPR expected to register about 19 new pesticide active ingredients in 2000 and early 2001. Four of these are categorized as "reduced risk" because they meet U.S. EPA criteria for posing less risk to people and the environment. Two of the "reduced risk" chemicals are pheromones – artificial scents that confuse insects and disrupt their mating cycles.

### Risk assessments completed

All substances are toxic at some dose. Risk is the likelihood that a person will react negatively to a particular concentration or dose of a chemical. Through its risk assessment process, DPR determines whether a pesticide presents a significant risk to human health. In 2000, DPR completed risk assessments on methyl isothiocyanate, DEET, deltamethrin, and methidathion. DPR risk assessments for atrazine, thiabendazole, chlorpyrifos, and molinate are nearing completion.



### Protecting air quality

DPR holds authority to prevent hazardous levels of pesticides in air. Under the State's Toxic Air Contaminant (TAC) Program, DPR evaluates airborne pesticide residues and, in cooperation with scientific reviewers, determines potential risks. If DPR identifies a pesticide as a TAC, the Department may consider use restrictions, in consultation with air districts and others. During 2000, DPR contracted with the California Air Resources Board to monitor for three pesticides: benomyl, and the fumigants methyl bromide and 1,3-D. (The fumigants were monitored to check the effectiveness of restrictions developed from previous monitoring.)

*Our scientists* DRAW ON DATA FROM MORE THAN  
160,000 PESTICIDE STUDIES IN THE DPR LIBRARY.



DPR completed risk evaluations for three pesticides: methyl parathion, methyl isothiocyanate, and azinphos-methyl. And DPR added two pesticides to its TAC list: the cotton defoliant DEF and an insecticide, methyl parathion.



#### Setting limits on pesticide residues

Before a pesticide can be used on a food crop, the U.S. Environmental Protection Agency sets a maximum residue – or “tolerance” – allowed on the crop at harvest. In 2000, DPR received new funding and staff to develop tolerances that protect health, are important to California agriculture, and that can quickly be adopted by U.S. EPA. In 2001, DPR’s goal is to help U.S. EPA develop 20 chemical-crop tolerances.



#### Registration backlog reduced

Budget cuts in past years led to a backlog of product registration decisions. In mid-1999, the Legislature increased DPR’s registration program budget. DPR hired and trained new staff to reduce the backlog and expedite final decisions, with an emphasis on lower-risk products. By November 2000, DPR reduced its backlog by more than 50 percent.



#### Responding to pest emergencies

Emergencies occur when an exotic pest invades the state, pest populations suddenly increase, or pests develop a resistance to a particular pesticide. Under these and other conditions, DPR may support requests for an emergency exemption (“Section 18”) that will allow temporary use of a chemical that has not been registered for a specific pest or crop. During 2000, DPR supported some 36 Section 18s that led to federal approval. They included toxic bait for use against the red imported fire ant; an insecticide to protect citrus from the glassy-winged sharpshooter; a fungicide to prevent garlic rust, and four emergency exemptions to help cotton growers adopt less-toxic pest management strategies.



Cutting-edge scientific analytical method also cuts costs

DPR’s Environmental Monitoring Branch annually collects from 1,000 to 3,000 soil and water samples that require pesticide residue analyses. Conventional analyses required expensive equipment and tedious extraction procedures with hazardous solvents. DPR has been developing and evaluating safer, faster, cheaper analytical methods for the last ten years. The result is an assay based on an antibody, enzymatic system similar to disease diagnostic tests and pregnancy test kits. It is known as enzyme-linked immunosorbent assay (ELISA).

Working in collaboration with the University of California, Davis, DPR was the first regulatory agency in the nation to develop and routinely use ELISA. DPR currently uses these assays for soil and water samples in our research and monitoring studies at a savings of from \$100 to \$150 per sample. DPR has documented this successful effort in 12 peer-reviewed scientific journal articles and book chapters.